

Alternative E

Delta Channel Habitat and Conveyance

Overview

This alternative will include a new unscreened diversion from the Sacramento River. This diversion facility will supply water for continued through-Delta conveyance to existing south Delta pumping plants. Extensive channel modifications will increase capacity so that velocities can be greatly reduced. Modifications will also restore broad habitat corridors to improve ecosystem function and productivity. The result will be a Delta where conditions for fish and wildlife are greatly improved. Levee improvements will be combined with channel modifications, and source control measures will improve water quality.

Reduced channel velocities and improved habitat protect fish and wildlife

The channel improvements will provide corridors of habitat along Steamboat Slough, the North and South Forks of the Mokelumne River, and the San Joaquin River. Setback levees along Steamboat Slough will provide improved transport of migratory fish through the Delta and a restored shaded riverine aquatic habitat corridor.

Steamboat Slough habitat corridor

Waterside berms along portions of Sherman, Jersey, Twitchell, and Bradford Islands will provide improved shaded riverine aquatic habitat, tidal wetland, and terrestrial habitat corridors. Setback levees along the North Fork of the Mokelumne River will create shaded riverine aquatic habitat and terrestrial habitat corridors. Setback levees along the South Fork Mokelumne River through portions of New Hope, Canal Ranch, and Brack Tract will create a large area of shallow tidal wetlands. The Mokelumne River improvements will increase flood protection in the North Delta by increasing the Mokelumne River channel capacity and provide for lower velocities towards the south Delta.

Mokelumne River habitat corridor

The size of the program along the Mokelumne River will be determined by biological criteria. The setback levees will be designed to reduce the impact of the south Delta diversions on fish populations by reducing channel velocities toward those diversions and providing attractive habitat for fish. The width of setbacks needed to meet these criteria still need to be determined. If standard setbacks are inadequate for this purpose, the conversion of islands into tidally influenced habitat will be considered. These improvements could be extended into south Delta channels.

Channels are enlarged to reduce velocities and improve conditions for fish

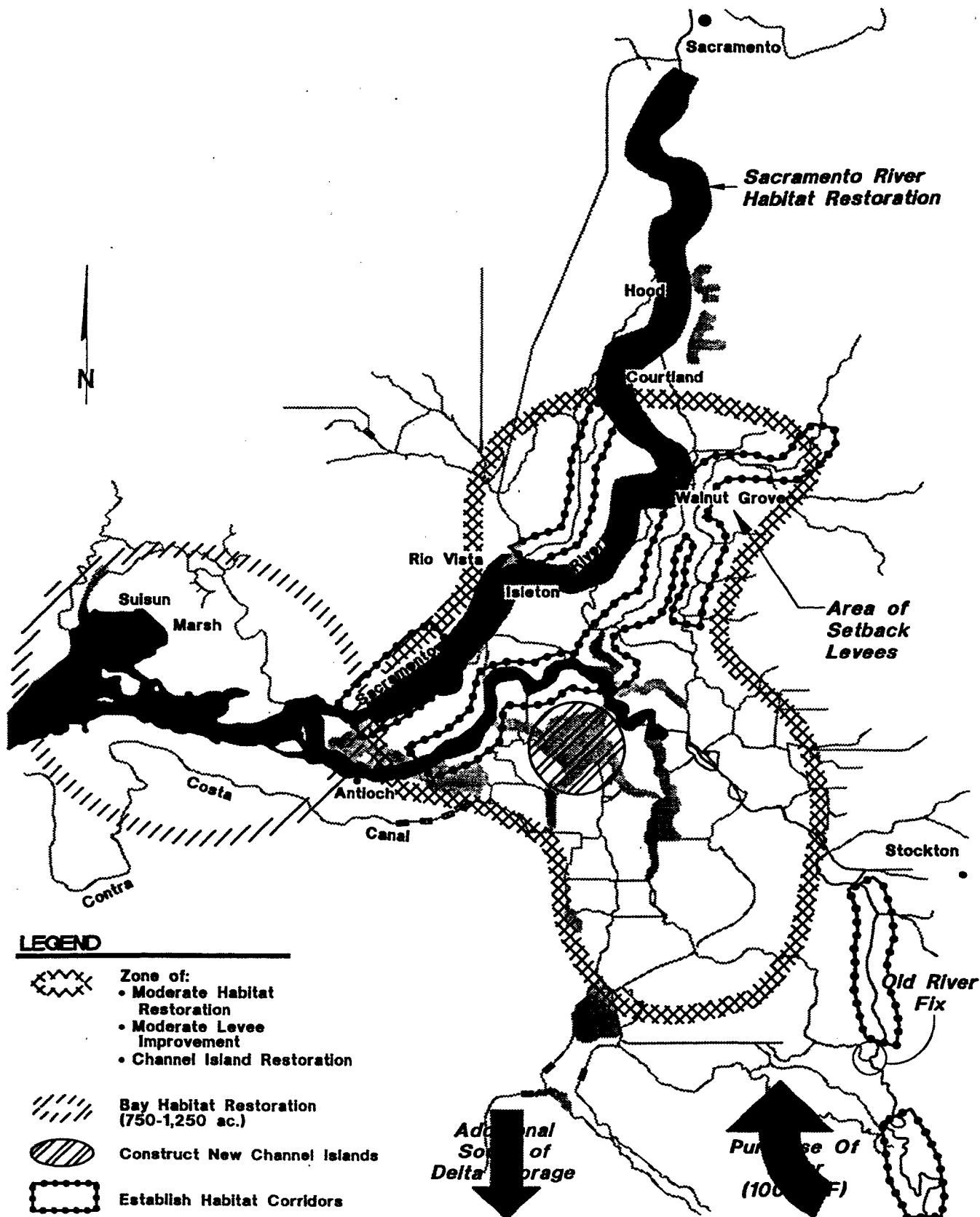
Setback levees along the San Joaquin River from Vernalis to Stockton provide an additional habitat corridor. Additional habitat improvements include creation of channel islands along portions of Frank's Tract to provide habitat enhancement and wave protection for neighboring Bethel, Webb, Bradford, and Jersey Islands.

San Joaquin habitat corridor and new Delta channel islands

This alternative will provide moderate levels of habitat along the Sacramento River downstream of Sacramento and will restore channel features on the San Joaquin River to improve survival of anadromous fish. Moderate levels of shallow tidal habitat will be developed near Suisun Bay to benefit migrating salmon and

Habitat, flows, and screens protect fish

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provide spawning and rearing areas for Delta smelt. Water (approximately 100 TAF) will be obtained or developed in the San Joaquin River basin for release as spring pulse flows to improve transport of San Joaquin River fish through the Delta. Fish screens will be installed on high and moderate priority unscreened diversions throughout the Bay-Delta system. Ecosystem restoration actions will be guided by a strategy of adaptive management.

A moderate demand management program including water conservation, water reclamation, and land retirement will be used to sustain supplies for existing water users and provide alternative supplies for other users. Urban "Best Management Practices" and agricultural "Efficient Water Management Practices" will be expanded, and substantial investments will be made in water reclamation to produce additional urban water supplies. This alternative will also establish a long-term drought water bank to improve supply reliability in dry years. Approximately 300,000 to 400,000 acres of land would be permanently retired, using willing sellers, to reduce agricultural water consumption and improve water quality.

To allow Delta export diversions to be shifted away from the spring (February-June) period, this alternative will increase conjunctive use and groundwater banking in the southern San Joaquin Valley to provide 300 to 500 TAF of annual supply.

This alternative will implement a program to control pollutants at their sources. Delta and tributary water quality will be improved substantially by reductions in pollutant discharges from agricultural, municipal, industrial, and mine sources. Marginally productive lands that contribute substantially to regional drainage and water quality problems will be retired. Measures to reduce the total salt load transported to the San Joaquin Valley will be implemented. Pollutants in San Joaquin River inflow will be diluted using water purchased or developed in the San Joaquin River basin.

The vulnerability of the Bay-Delta system will be reduced through implementation of a comprehensive Delta Protection Plan. The plan will guide the stabilization or improvement of certain Delta levees to increase protection, the maintenance of levees, and implementation of an emergency response program to address levee failure. Under this alternative, stabilization of levees would receive moderate emphasis, while maintenance and emergency response would receive modest emphasis.

Channel modifications simultaneously increase conveyance capacity, improve habitat conditions, reduce system vulnerability, and improve water quality. Habitat improvements help restore fish populations, leading to greater water supply reliability.

Potential Sequencing

Stage 1. Implementation would begin with the core actions.

*Water bank,
improved demand
management
balance supply
and demand*

*Conjunctive use is
increased*

*Pollutant source
control improves
water quality*

*Comprehensive
Delta Protection
Plan*

*Actions provide
multiple benefits*

Core actions

Stage 2. The second stage of implementing this alternative will consist of channel improvements along the North Fork of the Mokelumne River, screening of high priority diversions, water conservation and reclamation at most cost-effective levels, substantial expansion of groundwater banking and conjunctive use, and establishment of a long-term drought water bank. Implementation of a comprehensive Delta protection plan will begin. Additional San Joaquin River water (100 TAF) will be developed or acquired for environmental uses. Approximately 70,000 to 100,000 acres of marginally productive agricultural lands in the San Joaquin Valley will be retired. Water for environmental purposes will be purchased or developed in the San Joaquin River system.

Channel improvements, demand management, conjunctive use

Stage 3. The third stage will include channel improvements along Steamboat Slough, the Sacramento River and the San Joaquin River, pollutant source controls, and permanent retirement of 200,000 to 300,000 acres of agricultural land. Additional water conservation and reclamation will be implemented. Stabilization of levees would receive moderate emphasis, while maintenance and emergency response would receive modest emphasis.

Channel improvements, demand management

Stage 4. This stage will include creation of large areas of tidal wetland along the south fork of the Mokelumne River, screening of moderate priority diversions, and increased conjunctive use. Tidal wetlands will be restored near Suisun Bay.

Wetlands restoration

Stage 5. This stage will include creation of setback levees along the San Joaquin River and restoration of channel islands in Frank's Tract.

Setback levees, channel islands

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Potential Sequencing

